2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

someone was hungry while there was food in the village, he had only to sit outside a house where people were eating. It was bad manners to ask for food but equally bad to fail to offer it. One informant objected to having any house too near her own because "they will see us eat and we will have to send them something." If the hungry person owed his trouble to laziness or a stupid wife, he would be talked about and shamed into reform.

Occasionally, disaster overtook a whole family through illness or enemy raids and then it was the responsibility of the village to take care of the sufferers, the most generous man getting the most credit. It is safe to say that no one ever went hungry while there was food in the village for farmers, food gatherers and hunters would all share with him. No definite return was expected except general respect and good will but "if a person got the name of being stingy, he always had a hard time. Even his relatives didn't help him more then they had to" (26).

Papago gift basket.
Quantities are measured by the lines parallel to the basket rim.

In the constant interchange of gifts, certain equivalents had been worked out. The usual container was a basket bowl with a black pattern involving many lines parallel to the rim. A person receiving such a basket would note to what line the corn or beans reached and then fill it to the same point for the return gift. To fill it even higher was an act of virtue but to fill it short of the line was to commit social suicide. The bowls were made in two or three standard sizes so that almost any bowl formed a rough measure. The women's carrying nets were also about the same size with patterns which served for markers. One carrying net was equal to two ordinary basket bowls. There was a rough understanding as to the number of squash or jars of cactus syrup which equaled these measures for corn and beans.

TRADE

Such measures were always kept in mind in the exchange with non-relatives. It was not trade in the full sense, for there was no

2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

two baskets of beans and corn. Most old men knew how to spin cotton on the thigh and the purchaser's family might spin it or call in the neighbors for a working bee, giving them their meals meanwhile. If they brought raw cotton to the weaver, he got it spun in the same way. The chief articles made were large blankets to sleep on and narrower strips for womens' skirts. For the large blankets the price was a horse or its equivalent in produce or buckskin. The skirt the woman bought, herself, with a good willow basket of her own make.

Plaited baskets, plaited mats, netted carrying baskets and pots were made by elderly women, too old for the heavy work of corn grinding and food gathering. They were not such expensive articles as skins and cloth, an olla being worth enough beans or corn to fill two basket bowls while for a mat the measure was a winnowing bowl.

But besides this exchange among themselves, some Papago made a business of trading trips to the Pima, to Mexico and to the Yuma. These were a winter occupation on the same basis as hunting and sometimes combined with it. The Papago were homeless in the winter and many of them, instead of camping at the Well village wandered about trading their goods or their labor for enough to support them until the wet season came again.

Russell gives a list of the goods which the Papago, supposedly so poor, managed to get together for trade with the Pima. It includes giant cactus seeds, cholla fruit, agave fruit in roasted cakes and syrup, Rcat (wild potato), wild gourd seeds, small peppers, acorns from the Bellota oak, prickly pear syrup, baskets of agave leaf, sleeping mats, carrying baskets and fibre to make them, maguey fibre for picket lines, dried meat of deer, mountain sheep and cows tallow .... deer and beef, ... cheese, buckskin, livestock, red and yellow ochre, buff-colored ochre for baskets, salt.[1] What they wanted in return was food, principally wheat, which they themselves raised only in small quantities. But frequently their price was corn and beans enough to keep them alive. The people who used this expedient came from the northern villages, the Archie and Kuhatk groups and Káka, who were the Pimas' nearest neighbors. They often had relatives in the Pima country or at least friends and they pursued their exchange in the same manner they used at home.

The southern villages had their contacts with Mexico where they took principally dressed skins, cooked mescal from the mountains and their labor. They brought back knives and clothing and the knowledge of a more advanced culture than was to be found on the

[1] Russell pp. 93—94.

2: Underhill E-5 (1931-1935)1939 NU28 Papago NU28

with maguey cord so that they were about three inches apart. A short length of maguey cord with heavy knots at both ends was also used. The stick was made of catclaw (Acacia greggii) cut to the height of the player and with the end bent at the angle of a ladle.

The playing ground was a cleared space about "one hundred steps" long. If there were no trees at either end to mark it, sticks of cactus rib would be set up. The players all gathered in the middle and threw up the ball. It was picked up and thrown with the sticks, the aim being to carry it past the opponents' goal. The myths tell of women travelling from village to village to play this game, so enthusiastically that they left their babies uncared for. Spanish missionary nuns, as late as two generations ago, confiscated the sticks and burned them in order to get the womens' attention for household tasks.

The children's games can be played without betting though small wagers are not uncommon.

The ring and pin game is played with a stick of hard wood to which is attached a buckskin thong or a string of yucca fibre about eighteen inches long. The cord is strung with five rings made by slicing through a small squash when it is fresh. The pulp dries out and the circular strips of rind shrink until they resemble flat leather rings, from four to two inches in diameter and with an opening at least an inch across. The largest is placed nearest the tip of the stick and the smallest at the end, where it is kept from falling off by a solid tab of squash rind. The game is to swing the cord and then impale as many rings as possible on the stick.

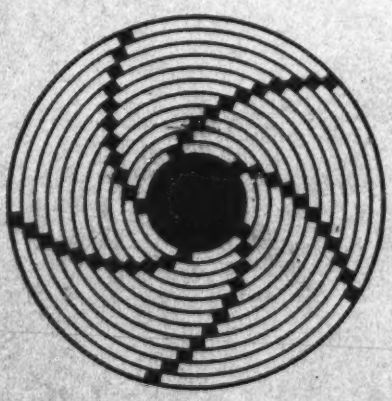


Fig. 5.
Papago Basket Designs used for Game Scoring.

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

total Papago income, but farming furnishes basic subsistence for over three-quarters of the families on the Reservation. It is now believed that cattle will never be fundamental in Papago economy but should be regarded as a supplement to the real basis of Reservation life—farming. 434 231 241

Other sources of income are few. About 6 per cent of tribal income (including subsistence) is derived from firewood and fenceposts cut from mesquite. There are known small deposits of gold, silver, lead, and manganese on the Reservation, but they are in the hands of whites and offer nothing but a little employment to Indians, as the Papago have only surface rights to their land, and any mineral rights belong to the federal government. (Any miner may acquire rights on payment of rental of the land and fees for destruction of property.) This is a sore point with the Papago, since they are the only Indians who do not have rights to minerals under their lands.[4] 434 313 316

Handicrafts furnish a small part of tribal income—about 3 per cent. The bulk of this income comes from the sale of baskets and pottery[5] through the tribal Arts and Crafts Board, which was established under the auspices of the federal Indian Arts and Crafts Board to provide a market for Papago handiwork. Papago baskets, made of yucca, willow, bear grass, and devil's-claw, are of the close-coil type; decorative design in black and white, with occasional green or red, is simple but often strikingly beautiful in its sharp contrasts. Through assisting the Papago to improve their work and get better prices for it, the Arts and Crafts Board should help to raise Reservation income. It should also give the Desert People experience in co-operative business which may serve as a foundation for ventures in other fields. 434 285

There are a few small Papago business enterprises on the Reservation, most of them trading posts, but returns from these stores are a minute fraction of tribal income. An increasing share of Papago income is from paid labor. As previously stated, for generations the Desert People tided themselves over lean years by going to Mexico or to the Pima country to work for ranchers or farmers, who paid them in food and seed. Now, however, wage work (and cattle sales) are shifting Papago economy from a barter to a cash basis. Em- 434 [441] 464

4. The reasons for this anomalous situation are partly political. Under the Gadsden Purchase Treaty of 1854, the United States agreed to respect the laws and customs prevailing in the area under Mexican rule. Since Spanish days, mineral rights had belonged to the crown or the state. For two years (1932–34) Papago lands were withdrawn from mineral entry and claim, but renewal of the treaty provisions was made a part of the Indian Reorganization Act of 1934. Papago resentment is understandable, since some other Indian tribes derive substantial income from mineral leases. Known deposits on the Reservation are small, but there is always the chance of discoveries, since great copper deposits are being worked near by.

5. The Papago also make rawhide ropes, wooden spoons, and other articles, chiefly for their own use.

[Text continues on p. 37-Analyst]

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

PLATE V

142
285
291
415

Chuck Abbott

PAPAGO BASKETMAKER

[p. 36]

854
●285
N15
857

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

PLATE XII

[p. 120]

Rosamond B. Spicer

UNDER THE RAMADA

Sister swings baby in his hammock while the mother works. Olla at right holds drinking water for the family

4: Joseph et al D, E-5 (1942-1943) 1949
NU28 Papago NU28

155
157 life and child-training. Apparently it operates as an almost automatic control in occasions of stress and conflict. In this sort of withdrawal which usually appears to be an intermittent reaction, not a definite introversion, the Papago child temporarily stops functioning as a social being and—quite legitimately according to his culture—isolates his personal drives of disturbing strength or direction in his imaginings.

Together with this reaction goes a tendency to evade commitments whenever possible. If pressed for decision, the children try to withdraw into themselves or appease the demanding agent with what they think is the minimum that may satisfy him and that may be conceded without exposing themselves. This trend, as we have noted, corresponds to an important function in Papago culture.

The most interesting result obtained with the Rorschach test is with regard to Papago children's mental approach, which is characterized by a strong drive to impose subjective interpretation upon reality and to avoid categorizing. We have already seen that the basis of this quality probably lies in the fusion of magical thought and reality in Papago culture, and we may assume that it is closely interrelated with the tendency to yield to imagining, as well as with the particular nature of the things imagined.

The influence which such findings may have upon the evaluation of the results of the Grace Arthur intelligence test is perhaps worth some consideration. According to the Rorschach test, aside from the tendency to avoid categorizing, Papago children seem to be capable of forming clear, objective concepts; but, especially when facing new and disquieting problems, this capacity and their fair faculty of differentiation, and of more complex organization of thoughts, are at times entirely obscured. Since the Arthur test scores these latter qualities for the most part, it is possible that this factor may have lowered the average I.Q. of western Papago children, who are more dominated by their native culture than the eastern children.

This also explains the low average level of creativity in Papago children according to the Rorschach test. They use imagination for personal control and satisfaction rather than objectifying it. Papago express themselves artistically in singing—the most subjective of all arts, in which the singer projects his feelings more into the rhythm or melody than into clearly formed thoughts—
[533] and by basketry the beauty of which is mainly achieved with a strong color
[285] contrast of black and white and much less often by a balanced or subtle design. Papago children's originality, as it appears in the Rorschach test, lies chiefly in the strange and quite often unreal quality of their thought content and is usually not accompanied by highly differentiated perception.

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

gan by Charles R. Steen, Ranger. Jones[113] reported that these pipes (as well as others taken from a ceremonial cave on Camelback Mountain near Phoenix) were made of reed grass (*Phragmites communis*). The pipes from Casa Grande were wrapped with cotton cloth, and both lots were stuffed with leaves of creosote bush as well as broken tobacco leaves. Jones is of the opinion that these are probably leaves of *N. attenuata*. In this same connection it is interesting to note that Fewkes[114] found large numbers of "cane cigarettes" in various rooms at the Casa Grande ruin as well as in caves near Superstition Mountain to the north of the ruin. Of special interest is the fact that he found a small dish of *N. attenuata* in one of the ruins at Casa Grande.

It is our firm belief that neither Papago nor Pima cultivated any kind of tobacco aboriginally, a situation in agreement with that for the Maricopa[115] who were adjacent to the Pima on the Gila, but that they did smoke the wild *N. trigonophylla* and *N. attenuata*.

Martynia

Pima and Papago anciently utilized the pods of devil's claw or unicorn plant (*Martynia louisiana*) in basketry. Although informants asserted that the Pimans cultivated this plant a very long time ago it is impossible to establish this definitely. It is possible that aboriginally they utilized only wild plants of *Martynia*, and that its cultivation came with the commercial stimulus to increased production of baskets.

There were two kinds of devil's claw—a black-seeded variety which grew wild, and a cultivated form with longer pods and white seeds, the longer strips of epidermal tissue being more suitable for making baskets. The white-seeded variety never grew wild but often appeared as a volunteer in cultivated fields.

[113] Jones, *Ceremonial Cigarettes*.
[114] Fewkes, *Casa Grande*, pp. 148-49.
[115] Spier, *loc. cit.*

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

 Pi Pa

This was women's acknowledged work in which the man seldom participated, and after corn was shelled it was woman's work alone to care for it. At present many of the Pima and Papago have mechanical shellers. Shelled corn was placed on a mat or cloth and again allowed to dry for two to three days. Grains were then winnowed in a large basket by tossing into the air to remove chaff. Or this might be done by tilting the basket about four feet above ground and allowing the kernels to fall gradually on a sotol mat or cotton cloth. Corn was always shelled before being stored, then was ground into meal as needed. [1462] 251 252

Storing Food Corn

Crops were never hidden by the Pima for protection from enemies. These Indians usually stored their corn, after shelling, in large cylindrical nest-like bins, or granaries, made of crudely coiled, thick bunches of arrowweed, which were very durable and lasted for years. They needed no base, since the roof or platform upon which they rested served this purpose, although a layer of arrowweed was spread on the spot where they were to stand. Over this granary was a low, cone-shaped roof of arrowweed extending beyond the rim, and covered with dirt. A cotton cloth was sometimes placed beneath the roof and over the contents of each bin. Varying considerably in size, the average bin was about eighteen inches tall by three feet in diameter. Their manufacture has been described in detail and figured by Kissell.[4] Pi Pa 251 415 285

These Pima granaries were usually placed on the roof, less commonly in groups on a platform of logs to keep them above the ground. Small sticks were placed across these logs and covered with arrowweed branches, which also served as a base for the bottomless bins. In post-Spanish times, groups of such granaries on a platform were enclosed by a low fence for protection against stock. In this connection, the reader is referred to Emory, Russell, Clark and Kissell.[5]

[4] Kissell, *Basketry of the Papago and Pima*, pp. 173-90.

[5] Russell, *op. cit.*, fig. 4; Clark, *Lessons from Southwestern Indian Agriculture*, fig. 12; Kissell, *op. cit.*, figs. 29, 30; Emory, *op. cit.*, p. 85.

5: Castetter & Bell N-5 (1938-1940 1942
NU28 Papago NU28
Pima NU29

Pa 251 415 285 Pima nest-shaped granaries were not used by the Papago. The very few storage baskets made by them were shaped like a hive, or a barrel, with incurving top, therefore of smaller diameter at the neck, and were about four feet in diameter and three high. The sides were usually crude coiling of twisted grass sewed together with mesquite bark, since arrowweed is rarely to be found in their territory. These granaries usually were not placed on tops of buildings, but outdoors on stones or boards. Since, unlike the Pima granary, they had no roof, the opening was covered with an old flat basket or a broken olla. Being constantly exposed to the weather, Papago storage bins lasted only about two years.

However, Papago preferred to hide their food, and the usual expedient was to use jars rather than baskets. The most common jar was an old olla which had lost its porosity and no longer kept water cool. But special jars for storage purposes were made, as well as traded. The lid consisted of a piece of broken olla weighted with dirt or a stone.

Formerly the Papago also made temporary enclosures of sotol mats to store their grain.

A patriarchal Papago family stored its crops in several different places. A large supply was kept in the storehouse close to the village, while a few granary baskets might rest on stones near the dwelling, or, rarely, on the roof. A supplementary storage place was located in the flats not far from the base of the mountains, within easy reach of the winter camp. This was often a pit, deep enough to hold jars and baskets, and covered with brush or dirt. Here the baskets Pa [304] were protected with branches of the very spiny cholla, *Opuntia Bigelovii*. During their winter travels, the family sent a man back to the storehouse now and then to get food, but they tried to leave the supply at the village untouched until spring, the period of food scarcity, and it was not drawn upon until absolutely necessary.

Pi Pa 251 415 286 A second type of Pima storage container was of coarse coil, used to store maize, beans, wheat, wild seeds etc., and

5: Castetter & Bell N-5 (1938-1940) 1942
NU28 Papago NU28
Pima NU29

was more carefully constructed than the arrowweed bin. The largest of these were globular in form among both peoples and might be as much as six feet tall and almost as wide. The smaller ones were rather bell-shaped among the Pima, and more or less barrel-shaped with the Papago. They were covered with a lid (usually the bottom of an old basket) and sealed with mud.[6]

After the introduction of wheat, the Pima made such baskets of a foundation of wheat straw bound together with strips of willow bark *(Salix nigra)*, mesquite or catclaw *(Acacia Greggii)*. Papago foundation elements were beargrass *(Nolina)*, ocotillo or wheat straw, the binding material of yucca or mesquite bark. This is the type of basket which Bartlett[7] observed among the Pima, and described as large vase-like baskets made of wheat straw ropes as thick as a man's arm, coiled into graceful forms and sewed together. He asserted that these held from ten to fifteen bushels and were filled with wheat and shelled corn. We have been unable to satisfy ourselves that this type of storage basket, figured and described by Russell[8] and Kissell,[9] is aboriginal. These were kept in a small storage house, never on roofs nor outdoors on platforms. This house is comparatively modern and of the same type as that described by Bartlett[10] in 1852. It was eight or nine feet high, rectangular in outline, with walls made of stakes of ocotillo or sahuaro ribs set close together, and provided with a dirt-covered roof. Although customarily left open for free circulation of air, at times they were covered with a layer of mud.

At present neither Pima nor Papago shell their corn to any great extent before storing. Much of it is simply thrown on top of an ocotillo *ramada* and dried without husking, then shelled as needed.

[6] Kissell, *op. cit.*, pp. 179-85.
[7] Bartlett, *Narrative*, II, 234-36.
[8] Russell, *op. cit.*, pp. 88, 143-48.
[9] Kissell, *loc. cit.*
[10] Bartlett, *loc. cit.*

5: Castetter & Bell N-5 (1938-1940 1942
NU28 Papago NU28
Pima NU29

work, as was the cultivation and harvesting. Plants were quite drought resistant.

Only the white-seeded form was grown, as its pods had longer, finer-grained and deeper black strips of epidermal tissue, and therefore more suitable for use in basketry. They were planted in hills about six feet apart with four or five seeds to the hill, in holes about six inches deep, although the seeds were covered to a depth of only two inches.

Pods were gathered as they matured, about the time maize was ripening, but all must be gathered before frost to prevent the black color of the pod from fading. Fruits were ready to harvest when the dry epidermis peeled off readily. The ripe pods were gathered and laid out in piles in the field to dry, and informants said they had seen their mothers spread wood ashes over such piles. When thoroughly dry the pods were hooked together to form large clumps or balls, and stored in a rain-proof building, since weathering affected their color.

Before removing the strips of epidermis for use in basketry, the pods were buried in moistened ground over night to facilitate the stripping. However, more recently some merely plunge the pods in boiling water to aid in removing this tissue. These strips were tied in bundles and stored in baskets or ollas. The process of preparing and utilizing *Martynia* in basketry has been discussed in detail by Kissell.[37]

Seeds of the unicorn plant were sometimes eaten but were of little importance as food. They were removed from the pods at the time the strands of epidermis were stripped, and were dried and stored in a small sealed olla.

Wheat

Time of Harvest

Pima and Papago planted wheat any time from November to February, and harvested in May or early June. However, late sowings usually produced small plants and a poor yield.

[37] Kissell, *Basketry of the Papago and Pima*, p. 202.

6: Densmore E-5 (1920)1929 NU28 Papago NU28

534
286
291
115
516

a, Jose Panco using scraping sticks with basket resonator

b, Severiano Garcia, Harry Encinas, and Jose Panco pounding basket drum

6: Densmore E-5 (1920) 1929NU28 Papago NU28

285
982

a, Burden basket

115
285

b, Basket bowl in which tiswin was served

6: Densmore E-5 (1920) 1929NU28 Papago NU28

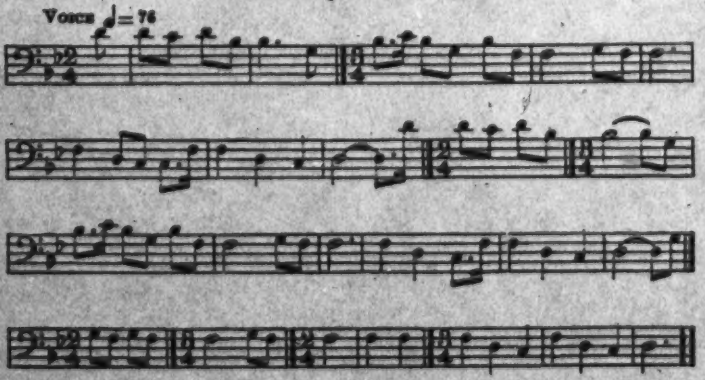
The burden basket (*kiăo*), which forms the subject of the next song, is a peculiar contrivance by which the women of Piman tribes were enabled to carry loads of mesquite wood and other material weighing, in some instances, about 100 pounds. It consisted of a conical netting stretched on a hoop, with four sticks, two of which were about 3 feet long. A separate long stick, called a "helping stick," formed a tripod, thus making it possible for a woman to load the basket before assuming the burden.[48] The position of the basket on the ground probably suggested the idea that it was "walking." The specimen illustrated (pl. 10, *a*) was obtained at Santa Rosa. The headband is missing but a portion of its cord remains. According to Mason, the "buttonhole or half-hitch stitch" of this netting does not appear in tribes north of the Piman but "occurs in Central America, in Latin South America as far south as Tierra del Fuego, where it will be found to be the only attempt at textiles."[49]

The people rose up again and went toward the south. As soon as they went out from the place where they had camped the burden basket walked behind them. Coyote came and saw the burden basket walking. He spoke to it and said, "You certainly are walking," and immediately it stopped.

Elder Brother said to the old woman, "Now I am going to give you strength so that you can carry the burden basket and never be tired." So he sang this song.

No. 17. Song That Gave Woman the Strength to Carry the Burden Basket
(Catalogue No. 999)

Recorded by JOSE MANUEL



TRANSLATION

Going toward the east where the road goes;
Where the burden basket walked.

[48] Mason, Otis T., Origins of Invention, London, 1895, p. 251.
[49] Mason, Otis T., Primitive Travel and Transportation, U. S. Nat. Mus. Rept. for 1894, p. 670, Washington, 1896.

7: Lumholtz N-5 (1909-1910)1912
NU28 Papago NU28

good condition; the young men were not particularly accommodating, as their interest seemed to be centred in the corral, where they were breaking in horses, separating cattle, etc. These natives had little to sell me beyond a fine basket used for harvesting sahuaro fruit. This kind of basket, which now is becoming rare, is of large size, water-tight, and is carried on the head. Its decorative designs sometimes represent the sahuaro cactus.

I visited Santiago, an old hunter, who, according to reports, used to be able to overtake deer, on the run, in half a day, and then shoot them with bow and arrow. In the hot weather these animals are not inclined to run long, as their feet become sore. Santiago is still very agile and quick in his movements and every day he goes out shooting quail, cotton-tails, jack-rabbits, and pigeons. His bow, which I secured, is made from that beautiful greenish blue bush of the desert called *condalia*. It is strengthened by an ox-tail hide pulled over it. The bow string is made from the ligaments of the back of the neck of the same animal. Arrows are made from the *amole* (yucca) flower stalk, the point being of cat-claw, tied by deer sinew.

He was also willing to be photographed. He had been to Tucson and there had gone through the experience of the camera, so he had no objection but would expect some gratuity. I took three or four snapshots with my kodak, and he asked fifty cents, which I gave him, but he demanded fifty cents for each exposure, in which I could hardly humor him. The Papagoes all have a great disinclination to being photographed, and

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

[Facing p. 56]

PAPAGO ETHNOLOGY

a, Saddle-bag of coarse fibre; length, 1.57 metres. *b*, Canteen of pottery ware, used when working in the field; height, 27 ctm. *c*, Cradle, with detachable hood; length, 56 ctm. *d*, Bundle of martynia pods, split and ready for use; they furnish the black color in basketry. *e*, Bundle of martynia pods, stored for future use. *f*, Water jar; height, 34 ctm. *g*, Package of dried squash bands; length, 31 ctm. *h*, height, 29 ctm. *i*, sahuaro baskets, water-tight, used in harvesting sahuaro fruit and in wine-making. *k*, Granary basket for keeping maize, wheat, etc.; height, 60 ctm.

285
H15
854

7: Lumholtz N-5 (1909-1910)1912
NU28 Papago NU28

285 The lady of the house had in active use two of those
482 peculiar burden baskets called *kíbo*, in which the women carry on their backs loads of wood, gourds, or pottery, as the case may be. It consists of an attractive looking net-work of mescal fibre, which has been produced from the leaves after they have been first boiled. The net is attached to a hoop which is fastened between four long poles of sahuaro ribs and is supported by a woven band of strips of zotol leaves that passes over the forehead. This contrivance is getting to be rare in the Papago country, with the introduction of mules and horses, and the woman who owns one is with difficulty induced to sell it. She spends considerable time in its manufacture, and in an old-fashioned family like the present it is of very great usefulness in every-day life. The black twine was from
302 her children's hair, which she cut once a year until they were about twelve years old. I expressed an ardent desire to buy one that was standing outside of the house against the wall, and, after having thought the matter over for a couple of hours, she decided to sell the most used one for five dollars, though she hated to do so; for an additional fifty cents she would mend the net-work and put in a new plaited band for the back and the head. The offer was promptly accepted.

Pablo and I made a tour of the houses of the ran-
361 124 cheria, some of them being three-quarters of a mile away. In two of them we found only old deaf women at home, the rest of the families being at the harvest of the savory cactus fruit. On our return, toward sunset, our Indian
573 friend and little Marianita were busily engaged in wash-

7: Lumholtz N-5 (1909-1910)1912
NU28 Papago NU28

air currents changed and became dry. In the evening the temperature felt just right, about 85° F., and the air, at an elevation of four thousand feet, had the superb quality of the desert.

I had selected my camp a couple of hundred yards from the house, on a sandy, level ground among small mezquite trees and choyas. The sandy surface was as clean as if man had never walked over it; the Indians on their way to and from the distant well at the foot of the mountains all followed the same track, and there were no waste paper and tin cans strewn about to impair the full enjoyment of nature, as would have been the case near civilized man's abodes.

The attractive camp, the nice family we had met, the addition to my collections, the peace and quiet of the place made me feel happy as I stretched myself on my cot under the starlit sky, which seemed so blue and cool and near. A soft breeze from the west fanned me to sleep, while a mocking-bird kept on singing its most delightful notes in the dark night. Ye dwellers in cities know not what it is to feel your freedom!

Next morning, shortly after sunrise, I strolled over to the house to see what my Indian friends were doing. The mother was busy at work repairing the burden basket she had sold me. She was just finishing a new band for the back, which is plaited in the same manner as the sleeping mat and from the same material. Some Indians rode up offering for sale a most interesting wooden object that resembled a broadsword, and which may be termed a hoe, made of the heavy iron-wood and accord-

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28
Sand Papago

which the Indians knew how to gather all the year round, 184
though after May that part of the plant which is above 222
ground withers away. They had their season of chia and used to come as far as Quitovaquita and Santo Domingo to gather mezquite beans (called by the Mexicans *pechita*) and eat sahuaro and pitahaya. Near all the tinajas are seen round holes from six to ten inches deep, made into the solid rock, in which these Indians pounded mezquite [252 412] beans. Their pestles are frequently found. The beans of the palo fierro were toasted, ground, and consumed as pinole. After the scanty winter rains the juicy plant of the sand dunes, *ænothera trichocalyx*, was boiled and eaten.

The clothing of these people was made from the skin 184
of mule-deer, antelope, or mountain-sheep. The hair was 281
first removed with a bone taken from the lower foreleg of the animal, and the skin was smeared with the brains. The root of the torote tree, crushed and left in water, furnished necessary material for the tanning process. The [291] man wore shirt and breech cloth, the woman a short skirt. They killed sea lions on the rocks by hitting them on the nose, and from their skins sandals and straps were cut. From the badger's hair they were able to plait [301] ribbons for the hair and make twine to be used for the [331] breech cloth. Women wore sandals, but no hair ribbons. The skirt was kept up by strings of buckskin.

The burden basket was not used, but they made carry- 184 285 ●
ing nets as well as pottery, material for which is abundant 482
on the coast. Baskets were manufactured from torote, willow, and bulrushes. In order to make bows, these 184
Indians travelled as far as the Colorado River to get 411

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

who was present. Even a married man with full-grown daughters was subject to this depravity. One young Indian wanted to dress like a woman, but was prevented by his father. A Pima Indian, after losing his wife, had a healthy child by his daughter.

In regard to the industries of the tribe, attention has already been called to pottery making. Weaving was formerly practised on a loom lying on the ground, but the art is now lost. The Papagoes, as well as the Pimas, are somewhat noted for their basket work, though neither of them is as clever as the Apache in this respect. They make trays and bowl-shaped ware for household work and also some large, deep, water-tight baskets which, from their principal use, may be termed sahuaro baskets. In these is gathered the juicy fruit of the sahuaro; the sirup and water are mixed for wine making and the wine itself is offered at the festival. They are rare at the present time. Women are the basket makers and in the best ware the white material used is produced from strips of young willow shoots, while the pods of the *martynia* (devil's claw), split in two, furnish the black part of the texture. The good workmanship of old is falling into decline, and the significance of the decorative designs is almost entirely forgotten. There is only one woman at the present time who is able to do first-class basket work, and she cannot tell what the designs mean. In Sonora the making of basketry has ceased to exist.

Granary baskets are still in common use in the Santa Rosa valley. The large ones are made inside of the house, the small door-opening preventing their removal. The

7: Lumholtz N-5 (1909-1910)1912
NU28 Papago NU28

285 material of which they are made was formerly a certain grass, which may still be used, though generally wheat straw takes its place. Strips of mezquite bark are employed in the binding. The granary basket has a flat cover, made in the same way, which is sealed with mud. Sometimes it is plastered throughout with mud as a protection against rats.

285 The pleasing designs seen in the old baskets are rapidly disappearing on account of the deplorable lack of æsthetic sense among those who are eager to buy Papago baskets. The makers are actually encouraged to insert crude representations of men and beasts in preference to the former beautiful conventionalized designs which the innate artistic sense of the Indian had evolved. The trader also teaches the Papago to make the baskets quickly and cheaply, in order that more money can be made in the market from ignorant buyers. A society for the preservation of aboriginal American art is of urgent need and should be attempted even at this late day.

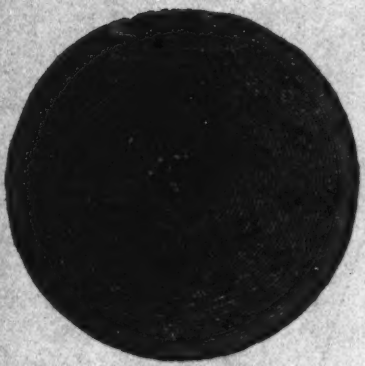
173 It is difficult to ascertain anything about the origin or early history of the tribe, beyond the traditions that the people when returning from across the sea left ceremonial sticks at Caborca, Quitovaquita, and Santa Rosa.

[611] 616 822 The tribe is divided into five groups, descent being in the male line. Their names have lost all meaning; two of the groups (*mam* and *vav*) are known as red-velvet ants (*vōki ôbimal*) and three (*ókul*, *ápap*, and *ápkĭ*) as white-velvet ants (*'tóa ôbimal*).* Any animal that has red about

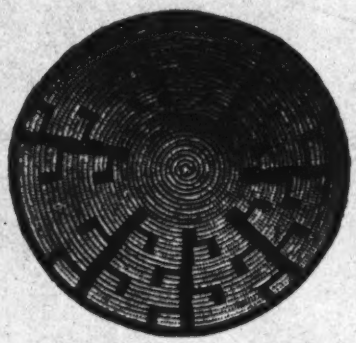
* The so-called velvet ants are females of certain wasps (of the family *mutillidæ*).

7: Lumholtz N-5 (1909-1910) 1912
NU28 Papago NU28

285●
531



a. Dog tracks



d. Sahuaro

b. Turtle

e. Juice falling from the sahuaro fruit; arrow points

c. Mountain

f. Meaning unknown

DESIGNS OF PAPAGO BASKETS

[Facing p. 364]

one which was to march out with the dancers, and one which was to remain inside. Singing began, the same song as that sung during the night, and one chorus, of about fifteen singers, in elaborate costume, emerged from the enclosure and, preceded by the herd of dancers, marched to the dance floor. This chorus sang independently of the chorus inside. 796

Meanwhile, from somewhere came two score or more of men, all in army overcoats, who lined up against the west side of the enclosure outside, some standing, some sitting, as though they were privileged persons occupying reserved seats.

796
292
[921]
[532]

The chorus carried, the first time, the triangular forms of cotton, representing, we were told, clouds, the brown zigzag lines signifying lightning. The costumes of the chorus were, in the main, as follows. Each man or boy, most were in their teens, was stripped to the waist, with bare legs and feet. They wore skirts brilliantly colored, both of cotton and of rayon, reaching to the knees. Many of these skirts had had panels in contrasting colors sewn to them, and one in particular had a vertical red panel on the left side of a blue skirt, with the four playing card symbols appliqued on it in blue. Several had Christmas tree decorations, tinsel, glass balls, etc., sewn to their skirts. Each chorister had, stuck in his belt behind, a pair of bull roarer sticks, nearly all of which were red, with white decoration. They all wore anklets of black material with cocoons sewn to them.

From the waist up the choristers were painted red, spotted all over with inch wide circular daubs of white clay. About their necks all wore bright silk rodeo neckerchiefs. One boy wore a mirror strapped across his chest with bright ribbons. Several boys wore strands of Christmas tinsel, like crossed bandoliers, over their shoulders. All wore the gourd masks, with the exception of the two little boys who wore the sacklike masks described above. These boys also wore skirts. [302]

At the head of the chorus, which marched in single file except when several had to help carry floats, the two little boys trotting alongside near the head of the column, was a leader. This leader, a middle-aged man, was clad in a plain white tunic, belted at the waist and reaching to the knees. His legs were painted white, and he wore sandals; his arms were bare and painted white, his hands were black. About his head he wore a white band in which on the left side was stuck a long tail feather of hawk or eagle. The upper half of his face was painted black, and the lower half smeared with white.

This leader carried in the crook of his left arm a deep tray basket of Pima manufacture, about 18" in diameter, painted white and black inside and out in alternate eighths. In the basket was white meal, which held in place four sectors of short, dark turkey feathers, lying against the inside of the basket. 796
293
285

17:Castetter & Underhill N,E-5 (1931-1934) 1935
NU28 Papago NU28

At the Well every family had a house or some sort of shelter, and there they kept a duplicate set of heavy household utensils such as jars and grinding stones.

When they settled for the winter the men hunted deer in the nearby mountains and the women made pottery and baskets, although many families wandered about hunting and trading and did not settle. The Altar valley in Sonora was productive all the year and families from the north traveled down there to work for their richer kinsmen. There was, in fact, a constant going to and fro over all Papagueria.

In June the white flowers began to appear on the giant cactus *(Carnegia gigantea)* and then every family returned to pick the fruit and to carry it down to the summer villages for their great yearly ceremony which would bring the rain. The rains came in July, then the fields were planted and the new year had begun.

In recent days these migrations have been extended rather than otherwise. The Papagos now plant winter wheat, as they were taught by the Spaniards, and must come home in May to harvest it. Often they go to the Gila and harvest the Pima crop, working on shares, and in July they go again to the Gila to pick the Pimas' cotton. Thus there are only a few months in the year when the people can be found at either the Fields or the Wells.

Houses at all the villages are now made of adobe. In the old days they were low, brush covered structures, of what has been called "wash basin shape," and the ceremonial houses are still made on that ancient pattern. There were no windows and no smoke hole. The door was a low arch, just high enough for a man to crawl through, and the only furniture was a number of mats made of sotol strips *(Dasylirion wheeleri)* laid around the edge of the one room, and which served both to sit and to sleep on. Valuable property, such as the man's bow and arrows and the woman's basketry materials, were thrust into thatch or hung from the rafters.

251 and continue to go out for other batches until a large area surrounding the village has been picked over. The roasted 252 buds are used with greens of the annual salt bush *(Atriplex wrightii)* or lambsquarter *(Chenopodium alba)* as a sort of vegetable stew.

222 Although all Papagos eat mescal *(Agave americana)*, 251 many of them get it by trade rather than at first hand. It [438] grows on the hills along the present international border and is usually gathered by parties who go to Sonora to work during their winter wanderings, stopping for a week or two to pluck and bake the mescal, and when necessary storing it in pits until they are ready to carry it home.

[412] Digging sticks of any hard wood, made chisel-shaped by pounding with a stone and hardened in the fire, are used to hack the plants off at the ground. The spiny leaves are then chopped off with a mescal hatchet, a semi-circular stone blade of granite or diorite.

251 The agave is pit-baked for twelve or more hours in the same way as are the cholla buds and joints. When this is done the remains of the leaves are pulled off, leaving an inner succulent mass about the size of a cauliflower. This has a slimy consistency and a sweet taste which is highly regarded. It is kept in jars to be eaten a little at a time or traded as a delicacy.

222 The flower stalks of the American aloe *(Agave americana)*, of sotol *(Dasylirion wheeleri)*, and the shoots of the night-blooming cereus *(Cereus greggii)* are also eaten as greens. They are not very extensively utilized however. [285] Sotol is also a source of basketry material, but if the inner tender leaves have been taken for this purpose, the flower stalk does not develop. The flower stalks are dug out of the plants with a long stick having a chisel-like end, and cooked immediately but never stored.

252 An upright species of prickly pear cactus *(Opuntia* 222 sp.) is utilized by washing the large waxy flowers to remove their sticky secretion then frying them in grease, formerly deer fat, now lard.

PLANT AND ANIMAL MATERIALS USED IN BASKETRY AND WEAVING

Since wood was not available and a migratory life made pottery inconvenient, basketry supplied most of the furniture and household utensils. One major need which it could not provide however was clothing, as the desert fibers were too coarse and stiff. The technique consisted of wrapped weaving, netting (coil without foundation), plaiting, and coiling.[6]

WRAPPED WEAVING

The binding together of coarse strong slats was the technique used for the house frame, shelf, door, cradleboard, trap, bird-cage, and a number of ceremonial objects. One of the chief warp materials was the ribs of the giant cactus *(Carnegia gigantea)*; these formed an upright bundle of long slats when the fleshy portion had rotted away, and were ready for immediate use. They might also serve for roofing and all sorts of light tools. For curved structures more pliable materials such as the twigs of the black willow *(Salix nigra)*, the catclaw *(Acacia greggii)*, and the root of mesquite *(Prosopis velutina)*, were used. Since the willow grows only along washes and therefore rarely in the Papago country, the twigs were usually obtained from the Pima country by families who went out to cut wheat for the Pimas in May.

The weft of wrapped weaving was made of split datil leaves *(Yucca baccata)* or of the American aloe *(Agave americana)* for large coarse objects like the house frame, while for finer ones buckskin or sinew was used.

The house frame might also be a sort of lattice wrapped weaving with warp of ocotillo rods *(Fouquieria splendens)*,

6. Expert work on the technique and art forms of Papago basketry has been done by Kissell (16) and by Wolfisch (unpublished). Breazale (5) also gives a number of illustrations. For further detail the reader is referred to the publications of these investigators.

17 Castetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

285 and weft of the soapweed *(Yucca elata)*. A form of screen door was made by joining a row of sahuaro slats by one or two rows of deer hide thong in simple wrapped weave, while for a shelf they used a narrower row of similar slats stiffened at each end by a transverse slat bound on with a thong.

285 The cradle board was about two feet long, made on a 854 frame of catclaw twigs, willow twigs, or mesquite root in the shape of an elongated arch, while transverse pieces of giant cactus rib were bound across this frame with deer sinew. The transverse pieces did not extend to the rounded end, where a small coiled basket was lashed to hold the baby's head "so it will not be flat like an Apache." A small mat of shredded aloe fiber was laid over the giant cactus ribs, while another similar mat covered the baby and was lashed to the cradle with buckskin thongs.

285 . Bird cages were made with two triangular or arch- 231 shaped ends over which was tied a flexible mat of giant cactus ribs, made on the principle of the door.

285 For ceremonies such as the *vikita* or harvest festival, large structures were made, sometimes six feet square, representing clouds or mountains. The basis was a framework of flexible ocotillo rods *(Fouquieria splendens)*, bent into shape and lashed with thongs. These were carried on light platforms made like the shelf.

COIL WITHOUT FOUNDATION

285 The carrying net is no longer used since the Papagos 415 have come into possession of wagons, but it has frequently been described by earlier observers (16, also Weltfisch unpublished).

The net itself was of two-ply aloe fiber *(Agave americana)* in the shape of an inverted truncated cone, the stitch being what has been called "coil without foundation." The cone was supported by four cross poles and fastened to the rim at the top by hair cord, which also passed through the hole at the bottom to be tied again with hair cord under-

17:Castetter & Underhill N,E-5 (1931-1934) 1935
NU28 Papago NU28

neath. The whole projected above the woman's head and served as stays for loads of wood and other loose objects. The frame was so constructed that the rear portion of it could rest flat against her back, while she supported the two front poles of the frame by a plaited headband made of aloe cord. The carrying net is the only article of basketry dyed in color, the frame being spotted with red clay and the lacework rubbed with red clay and indigo to bring out the pattern.

Men carrying deer meat used a bag of knotted netting without a frame, made of two-strand aloe fiber. After the advent of the horse these were used as saddle bags. Also, two of these bags stuffed with grass formed a primitive saddle.

PLAITING

Since the Papago had little cotton or weaving they supplied the lack of fabrics partly by skins and partly by plaited articles made of sotol *(Dasylirion wheeleri)*. Sotol, too coarse and rough to be used in making clothing, was utilized to make large, tough sleeping mats which could be rolled up and carried about; also in making cradle mats, back mats for the carrying frame, headbands, headrings, and two kinds of baskets.

Sotol leaves are prepared for use by first scraping off the spiny edge with a knife, then splitting the leaves lengthwise in two with the thumbnail (the thumbnail in olden days was kept long to be used as a knife). These withes are triangular in cross-section, and the cushion of pulp on the inner margin is removed, making a flat strip of uniform thickness about an inch wide, with both a rough and a smooth side. The withes are dried in the sun for a few days, then wrapped and stored. When needed they are buried the night before in moistened ground in order to make them flexible.

The sleeping mats made of sotol, and similar to the Mexican *petate*, were about six by three feet with rounded

17:Castetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

285 513 corners. Mats of his kind, made of cattail *(Typha latifolia)* with a wicker edge are used by the Hopi.

285 Sotol back mats to be placed between the back and the carrying frame were of the same shape as the above but much smaller, and with a space left near one end for the poles to pass through. Sometimes a mat of similar shape and construction was laid on the cradle board under the pad of aloe fiber.

[462] The sotol headband for the carrying net was a ring of plaiting about three inches wide, doubled flat. The head-ring for balancing pots was a cylinder about six inches in diameter folded triple to give strength.

Sotol baskets were of two shapes. The trinket basket had rounding sides with a square base and cover, and might be from eight to twelve inches across. A square, shallow basket of this same weave but with spaces left between the strands was used as a sieve. The second type of basket—the *waca* ceremonial basket—was oblong, shaped like a deep box, the lid being a duplicate of the basket except slightly larger, and was tied on with a thong. Large baskets of this sort were used to hold the sacred objects belonging to a village, and were wrapped in skins for further protection and kept in a cave or a tree. Smaller baskets of this type were used by individuals to hold scalps, eagle down, curing fetishes or shaman's properties, though shamans also used buckskin bags.

COILING

All Papago women made coiled basketry, though the more difficult plaiting and netting were often left to the experts. Twigs, particularly willow *(Salix nigra)*, were considered the best foundation for coiling since they are strong and swell when wet, making the basket water-tight. Willow twigs were secured from the Pima country and had to be peeled on the day they were cut or the bark would adhere. After being peeled the twigs were split in two lengthwise with the aid of a basketry awl, dried in the sun, and then carried home.

17:Castetter & Underhill N,E-5 (1931-1934) 1935
NU28 Papago NU28

In the Papago country several kinds of twigs are 285
obtainable, especially those of the mulberry *(Morus microphylla)*, the catclaw *(Acacia greggii)*, and the bloodroot bush *(Tatropolia cordiophylla)*. Mulberry twigs were gathered by families who went to the mountains for that purpose in the rainy season; although tough and hard to handle they were split like willow twigs, and made serviceable baskets. Catclaw was similarly gathered and prepared except that its thorns were knocked off with a stone before it was peeled and split. The bloodroot bush has a thick rubbery stem which cannot be easily split, so its smooth, branchless, unpeeled stems made bulky baskets.

The leaves of several plants such as beargrass *(Nolina erumpens)*, datil *(Yucca baccata)*, soapweed *(Yucca glauca)* and sotol *(Dasylirion wheeleri)* were frequently used as foundation in coiled basketry. Formerly the women severed the beargrass leaves one at a time and brought them home in the carrying net; the leaves were sun-dried and, for use, split into four, five, or six strands. At present the practice is for a man to go out and cut whole tufts of beargrass with an axe and haul home in a wagon a six-month supply. When beargrass was not obtainable the soft and bulky datil, the soapweed, and the stiff and brittle sotol were used for foundation. The final resource was a species of tall red grass which abounded in the rainy season.

For the sewing element there were, formerly, only two materials, a white and a black. The black was *ihu'k*, the unicorn plant or devil's claw *(Martynia fragrans)*. It grows wild in the Papago country but women, long ago, began to protect fertile patches of it by erecting a fence of branches to keep off the rodents. Now many sow the seed and raise a regular crop. Women with no access to devil's claw make long journeys to buy the dried pods, for without them no coiled basket can be made.

The part of the plant used is the pod, which is very tough in texture and, in color, a deep permanent black. The pod has a rib on each side, much like a string bean, but the

17 Cauetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

285 ribs project beyond the pod in long, wire-like hooks. Great globular bunches of these pods, with their projecting hooks hang in the house of every basket maker. Before they can [351] be split and bent as sewing withes, the pods must be softened with lye and water. The Papago method of accomplishing this is to spread them on the ground, scatter wood ashes over them and leave them for a week. Just before they are to be used, they are buried in dampened ground. The next morning, they are sufficiently softened to allow the ribs and hooks to be split off. One rib and hook together form a strip about ten inches long and pithy in the middle. The worker splits it in two, removes the pith and thus has two sewing strips, each a quarter inch wide. These strips she keeps soaking in water while she works, so that they will be pliable.

The white element in the design was always willow *(Salix nigra)*. The strips are the same as those used for the foundation except that, for sewing, one withe is split into six or eight strips. Since willow does not grow in the Papago country, women, in the old days, economized by making their baskets largely black. An old Papago basket can be distinguished from a Pima by the predominance of black in the design.

285 For modern commercial purposes, women have begun 439 to use the inner leaves of *takwi*, or soapweed *(Yucca glauca)* for sewing. The women gather, dry, split, and clean off the rough edges of these leaves much as they do with sotol. Their color is whiter than willow but it forms a soft non-water-tight basket used only for trade. Also, under the influence of traders, women have begun to introduce the outer leaves of soapweed which have turned brown with age, and women who make basketry a business have begun to experiment with other twigs and roots.

285 The most important article made in coiling was the bowl, which varied considerably in shape according to its uses for winnowing, stone boiling, serving liquor, gathering, sorting, parching, and storing food. A large inverted

17;Castetter & Underhill N.E-5 (1931-1934) 1935
NU28 Papago NU28

basket bowl constituted the drum, and a small basket might serve as a drinking cup. All these because of the hard usage received were usually made of willow throughout, but for the water-tight vessels willow was essential as it swelled and filled the interstices.

The water bottles (no longer used) were tall, slender bottle shapes with an incurving neck. They were smeared outside with a gum-like secretion from the white brittlebush *(Encelia farinosa)*.

The basket granaries seen were about three feet high and sloping up gradually from a two-foot base. The warp element was beargrass *(Nolina erumpens)* or wheat straw when the latter was available; the weft, mesquite bark *(Prosopis velutina)*. ((For details see Kissell, 16).

The tools for coiled basketry are awls with points of varying length, at present made of steel but formerly of mesquite wood, generally with a handle of creosote bush wood *(Covillea glutinosa)*.

COTTON SPINNING AND WEAVING

Weaving was a rare art practiced by a few old men. One who wanted a cotton blanket or skirt would trade for the cotton, either from the few who raised it or from the Pimas. He might be able to have the spinning done at home but generally he brought the load of raw cotton to the weaver, with the gift of a large basket, beads, or dried produce. This was the price for the weaving.

The weaver called in all his neighbors for a spinning bee, giving them their meals as pay. Both men and women could spin but it was a favorite occupation of old men. They first ginned the cotton by putting it in a basket bowl and working the seeds out with a stick. To separate the fibers the worker twanged his bow string over them, causing the topmost fibers to twist around the string. This method is described by Spier (23) for the Maricopa who perhaps learned it from the Pima. The cotton was spun on a spindle of arrow weed *(Pluchea sericea)* eighteen inches high, with

19: Dobyns E-5 (1950) 1951 NU28 Papago NU28

[Housing in Southern Atizona Labor Camps]

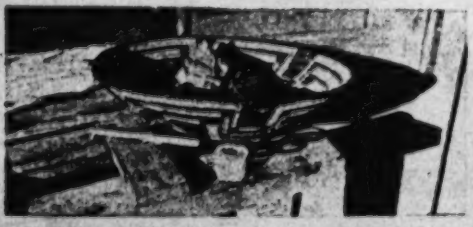
362
[415]

A ramada made living more bearable...

The Desert People have learned to lock their cabins while they work.

Most Papagos slept on cots . . . some on the ground.

[285]
[177]



Usually camp furnishings were Anglo materials . . . scissors and thread, a comb . . . but some Papago material culture persisted . . . corn, and a willow and devil's claw basket.